

# Claims

- [c1] 1. A compressed air supply system comprising:  
a compressor, a compressed air line that connects an outlet from the compressor to an inlet of a first active component, and an adjustable fan that is controlled by a control unit and which is arranged to generate an air flow to cool the compressed air line; and  
the control unit is arranged to determine a cooling requirement of the compressed air delivered by the compressor and to generate an activation signal for the adjustable fan when a cooling requirement exists, thereby protecting said first active component against thermal overload resulting from compressed air fed in from the compressor.
- [c2] 2. The compressed air supply system as recited in claim 1, wherein the control unit is arranged to determine that a cooling requirement exists if the compressor is active and the working speed of the compressor exceeds a specific limit.
- [c3] 3. The compressed air supply system as recited in claim 2, wherein the control unit is arranged to determine that a cooling requirement exists if the ambient air tempera-

ture exceeds a specific limit.

- [c4] 4. The compressed air supply system as recited in claim 1, further comprising:  
a pressurized tank and the compressor being arranged to assume an active state when the compressor feeds air to the pressurized tank and a passive state when the compressor is not feeding air to the pressurized tank, the compressor is arranged to assume one of these states as a function of an air supply requirement under the influence of a control signal, and the control unit is arranged to determine that the compressor is active by registering the control signal.
- [c5] 5. The compressed air supply system as recited in claim 4, wherein the control signal is pneumatic and is registered by the control unit through a pressure sensor.
- [c6] 6. The compressed air supply system as recited in claim 4, wherein the control signal is electrical and is registered and generated by the control unit.
- [c7] 7. The compressed air supply system as recited claim 1, further comprising:  
a pressurized tank arranged to store compressed air fed in by the compressor;  
the compressor being arranged to assume an active state

when the compressor feeds air to the pressurized tank and a passive state when the compressor is not feeding air to the pressurized tank, the compressor being arranged to assume one of these states as a function of an air supply requirement; and  
a pressure sensor arranged in the pressurized tank and the control unit arranged to determine that the compressor is active based on the pressure registered by the pressure sensor and from the change in pressure in the pressurized tank.

[c8] 8. The compressed air supply system as recited in claim 7, wherein the control unit is arranged to determine that the compressor is active when the pressure sensor registers a pressure in the pressurized tank lower than a first limit.

[c9] 9. The compressed air supply system as recited in claim 7, wherein the control unit is arranged to determine that the compressor is inactive when the pressure sensor registers a pressure in the pressurized tank exceeding a second limit.

[c10] 10. The compressed air supply system as recited in claim 9, wherein the control unit is arranged to determine that the compressor is active when the pressure sensor registers a pressure in the pressurized tank between the first

and second limits and the sensor registers the fact that the pressure is rising and that the control unit is arranged to determine that the compressor is inactive when the pressure sensor registers a pressure in the pressurized tank or pressurized tanks between the first and second limits and that the sensor registers the fact that the pressure is falling or constant.

[c11] 11. The compressed air supply system as recited in claim 1, wherein a temperature probe is arranged to measure the temperature of the compressed air delivered by the compressor and the control unit is arranged to determine that a cooling requirement exists if the temperature of the compressed air delivered by the compressor exceeds a specific limit.

[c12] 12. A vehicle comprising:  
an internal combustion engine;  
a cooling system coupled to the internal combustion engine;  
an adjustable fan controlled by a control unit;  
a compressed air supply system comprising a compressor, a compressed air line that connects an outlet from the compressor to an inlet to a first active component, the adjustable fan being arranged to generate an air flow intended to cool a radiator forming part of the cooling system and the compressed air line; and

the control unit is arranged to determine a cooling requirement of the compressed air delivered by the compressor and to generate an activation signal for the adjustable fan when a cooling requirement exists, thereby protecting the first active component against thermal overload resulting from compressed air fed in from the compressor.

[c13] 13. The vehicle as recited in claim 12, wherein the compressed air supply system further comprises:  
a pressurized tank; and  
the compressor is arranged to assume an active state when the compressor feeds air to the pressurized tank and a passive state when the compressor is not feeding air to the pressurized tank, the compressor being arranged to assume one of these states as a function of an air supply requirement; and  
the control unit being arranged to determine that the compressed air delivered by the compressor has a cooling requirement when the compressor is activated and the engine speed of the internal combustion engine exceeds a specific limit.

[c14] 14. The vehicle as recited in claim 13, wherein the compressed air supply system further comprises:  
the pressurized tank and the compressor is arranged to assume an active state when the compressor feeds air to

the pressurized tank and a passive state when the compressor is not feeding air to the pressurized tank and the compressor is arranged to assume one of these states as a function of an air supply requirement; and  
the control unit being arranged to determine that the compressed air delivered by the compressor has a cooling requirement when the compressor is activated and the speed of the vehicle is less than a specific limit.

[c15] 15. The vehicle as recited in claim 13, further comprising:

the pressurized tank and the compressor is arranged to assume an active state when the compressor feeds air to the pressurized tank and a passive state when the compressor is not feeding air to the pressurized tank and the compressor is arranged to assume one of these states as a function of an air supply requirement; and  
the control unit being arranged to determine that the compressed air delivered by the compressor has a cooling requirement when the compressor is activated and the outdoor temperature exceeds a specific limit.